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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,210	05/17/2005	Tomoko Maruyama	03500.017831	9407

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EXAMINER

REDDY, KARUNA P

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/535,210	Applicant(s) MARUYAMA ET AL.	
	Examiner Karuna P. Reddy	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) 1 and 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/535,210.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/17/2005, 8/29/2006</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

1. The document number (EP 022741) listed in IDS is different from the one submitted. Appropriate correction to document number on the IDS form is requested.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "high" in claim 6 is a relative term which renders the claim indefinite. The term "high polymer" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Berge et al (WO 01/77198 A1).

Berge et al disclose a microgel formed from one or more solvophobic monomers and one or more solvophilic monomers to form one or more block copolymers. The block copolymers are dispersed in a dispersing medium to form micelles. The dispersing medium can be aqueous or lipophilic. The reference also refers to encapsulation of wide variety of materials (abstract). The component of the block that is soluble forms shell of the micelle and that which is less soluble or insoluble forms core of the micelle (page 19, lines 9-11). Depending on the solvophobic – solvophilic block copolymer and dispersing medium, micelle or a reverse micelle can be formed. For example, poly(butyl methacrylate)-block-poly(methyl acrylic acid) , a solvophobic – solvophilic block copolymer, may be dispersed in water, a solvophilic solvent to form micelles in which the methacrylic acid segment forms the shell and butyl methacrylate segment forms core of the micelle. The same block copolymer may be dispersed in a hydrocarbon solvent to form an inverse or reverse micelle in which the methacrylic acid segment forms the core (page 19, lines 19-24). Berge et al's microgel has been used to encapsulate particles or molecules including an inorganic oxide such as TiO_2 (page 23, lines 6-11). The particles/molecules migrate through dispersing medium to the micelle (page 21, lines 11-16).

Furthermore, a polymerizable monomer and a free radical initiator may be added to the solution containing micellized block copolymer and the solution heated or irradiated (page 16, lines 14-19).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berge et al (WO 01/77198 A1)

The discussion with respect to Berge et al in paragraph 5 above is incorporated herein by reference.

However, prior art does not teach using block polymer having a repeating unit structure of polyvinyl ether.

However, prior art contemplates monomers of formula $\text{CH}_2\text{C}(\text{L})(\text{M})$ to form block polymers, where L is selected from a group consisting of H and M is selected from group consisting of OR. In light of the above, it therefore would have been obvious to one of ordinary skill in the art at the time invention was made to use vinyl ether monomers for forming the block polymers having a repeating unit structure of polyvinyl ether because, this embodiment is within the generic disclosure of the reference and a skilled artisan would have expected all embodiments of a reference to work, motivated by expectation of success.

10. Claims 1- 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (US 2003/0050364 A1) in view of Tomoki et al (EP 0272585 A2).

The prior art of Sato et al discloses a composition comprising a block polymer, a solvent and a substance having a predetermined function. Furthermore, the composition relates to an ABC type block polymer compound where in the polymer is an ABC type triblock block polymer(abstract). The ABC type block polymer is preferably a polymer containing a polyvinyl ether structure. Particularly, the polyvinyl ether structure preferably has a repeating unit of the general formula $-(CH_2-CH(OR))-$ (page 1, paragraph 0014).

However, the reference is silent with respect to the addition of polymer precursor that can be cured with heat or light.

Secondary reference of Tomoki et al teaches the dissolution of liquid crystal materials in photo-curable vinyl compounds where in the composition is cured with light (abstract). Such a composition when cured with light results in a uniform distribution of liquid crystal material and the cured product (page 3, lines 16-19). Therefore, it would have been obvious to one skilled in the art at the time invention was made to add the polymer precursor of Tomoki et al into Sato's composition to obtain the above mentioned advantages, motivated by expectation of success.

11. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berge et al (WO 01/77198 A1).

The discussion with respect to Berge et al in paragraph 5 above is incorporated herein by reference. In addition, the prior art claims addition of microgel containing micelle to coating compositions (page 42, claim 46).

However, the prior art is silent with reference to forming a cured thin film of their microgel composition on a substrate and a method for producing the cured film.

Given that the microgel composition of Berge et al consists of polymerizable monomers and free radical initiator and the solution is heated or irradiated with light and further in view of it being used in coating compositions, it would have been obvious to one skilled in the art at the time invention was made to coat a substrate with a solution containing microgel micelle composition of Berge et al and curing it with light or heat to arrive at the instant claims because Berge et al claims the use of microgel in coating composition and furthermore, microgel consisting of polymerizable monomer may be irradiated or heated to decompose the free radical initiator which will initiate the polymerization process. The examiner makes a note that coating compositions applied on substrate qualifies as thin films.

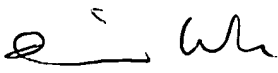
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karuna P. Reddy whose telephone number is (571) 272-6566. The examiner can normally be reached on Monday-Friday 8:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karuna P Reddy
Examiner
Art Unit 1713


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